

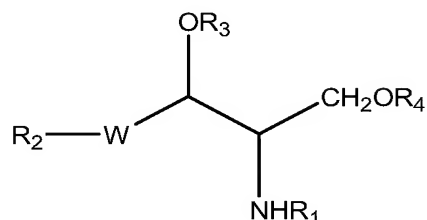
Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-29 (Cancelled).

30 (Currently Amended). A compound of formula (I):



wherein

R₁ represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R₅;

R₂ and **R₅** represent, independently, a branched or linear C₁₀-C₂₄ alkyl, alkenyl or polyenyl ~~group~~group;

R₃ and **R₄** are independently a group -C(O)-NR₆ R₇, in which **R₆** and **R₇** being the same or different for R₃ and R₄ ~~and~~ represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or **R₃** is a hydrogen; or **R₃** and **R₄** form together with the oxygen atoms to which they are bound a heterocyclic ring comprising -C(O)-NR₉-[R₈-NR₉]_m-C(O)-, in which **R₈** represents a

saturated or unsaturated C₁-C₄ alkyl and **R₉** represents a hydrogen or a polyalkylamine of the formula $-(R_8-NR_9)_n-$, wherein said R₉ or each alkylamine unit R₈NR₉ may be the same or different in said polyalkylamine; and **n** and **m**, represent, independently, an integer from 1 to 10; and

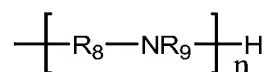
W represents ~~a group selected from~~ -CH=CH-, -CH₂-CH(OH)- or -CH₂-CH₂-.

31 (Previously Presented). The compound of Claim 30, wherein R₁ represents a -C(O)R₅ group, R₅ being as defined.

32 (Currently Amended). The compound of Claim 30, wherein said R₂ and R₅ represent, independently, a linear or branched C₁₂-C₁₈ alkyl or alkenyl ~~groups~~group.

33 (Previously Presented). The compound of Claim 30, wherein W represents -CH=CH-.

34 (Currently Amended). The compound of Claim 30, wherein **R₁** represents a -C(O)R₅ group; **R₅** represents a C₁₂-C₁₈ linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R₂** represents a C₁₂- C₁₈ linear or branched alkyl or alkenyl; **R₁-R₃** and **R₄** represent, independently, a group $-C(O)-NR_6R_7$, and **R₃** may also represent a hydrogen, wherein **R₆ and R₇** represent, independently, a hydrogen or a polyalkylamine having the general formula (II):



wherein

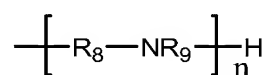
R₈ represent a C₁-C₄ alkyl;

R₉ represents a hydrogen or a polyalkylamine branch of formula (II), said **R₈** and **R₉** may be the same or different for each alkylamine unit, -**R₈**NR₉-, in the polyalkylamine of formula (II); and

n represents an integer from 3 to 6.

35 (Previously Presented). The compound of Claim 34, wherein **R₃** is a hydrogen atom.

36 (Currently Amended). The compound of Claim 30, wherein **R₁** represents a -C(O)**R₅** group; **R₅** represents a C₁₂- C₁₈ linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R₂** represents a C₁₂- C₁₈ linear or branched alkyl or alkenyl; **R₃** and **R₄** represent, independently, a group -C(O)-NR₆R₇, wherein **R₆** and **R₇** represent, independently, an alkylamine or a polyalkylamine having the general formula (II):



wherein

R₈ ~~represent~~ represents a C₁-C₄ alkyl;

R₉ represents a hydrogen or a polyalkylamine branch of formula (II), said **R₈** and **R₉** may be the same or different for each alkylamine unit, -**R₈**NR₉-, in the polyalkylamine of formula (II); and

n represents an integer from 3 to 6.

37 (Currently Amended). The compound of Claim 30, wherein **R**₁ represents a --C(O)R_5 group; **R**₅ represents a C₁₂-C₁₈ linear or branched alkyl or alkenyl; **W** represents --CH=CH-- ; **R**₂ represents a C₁₂-C₁₈ linear or branched alkyl or alkenyl; **R**₃ and **R**₄ form together with the oxygen atoms to which they are bonded a heterocyclic ring comprising $\text{--C(O)--[NH--R}_8\text{]}_n\text{--NH--C(O)--}$,

wherein

R₈ represents a C₁-C₄ alkyl, wherein for each alkylamine unit having the formula -NH-R₈-, said R₈ may be the same or different; and

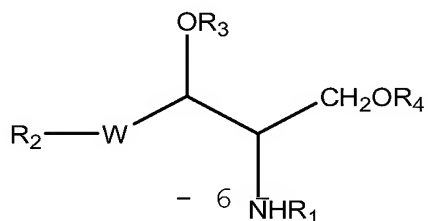
n represents an integer from 3 to 6.

38 (Previously Presented). The compound of Claim 30, wherein said R₈ is a C₃-C₄ alkyl.

39 (Previously Presented). The compound of Claim 30, being N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

40 (Cancelled).

41 (Currently Amended). A process for the
preparation of a sphingoid-polyalkylamine conjugate of formula
(I)



wherein

R₁ represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R₅;

R₂ and **R₅** represent, independently, a branched or linear C₁₀-C₂₄ alkyl, alkenyl or polyenyl ~~group~~group;

R₃ and **R₄** are, independently, a group -C(O)-NR₆R₇, in which **R₆** and **R₇** being the same or different for **R₃** and **R₄**, ~~and~~ represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or

~~**R₃** represents a hydrogen; or~~

R₃ and **R₄** form together with the oxygen atoms to which they are bound a heterocyclic ring comprising -C(O)-NR₉-[R₈-NR₉]_m-C(O)-, in which **R₈** represents a saturated or unsaturated C₁-C₄ alkyl and **R₉** represents a hydrogen or a polyalkylamine of the formula -[R₈-NR₉]_n-, wherein said R₉ or each alkylamine unit R₈NR₉ may be the same or different in said polyalkylamine; and **n** and **m** represent, independently, an integer from 1 to 10; and

~~**W** represents a group selected from -CH=CH-, -CH₂-CH(OH)- or -CH₂-CH₂-;~~

the process ~~comprises~~comprising:

(a) providing a sphingoid compound of formula (I) wherein R_1 , R_2 and W have the meaning as defined above and R_3 and R_4 represent, independently, a hydrogen atom or an oxo protecting group, wherein at least one of said R_3 and R_4 represent a hydrogen atom;

(b) reacting said compound of step (a) with an activating agent for activating the hydroxyl moieties of OR_3 and/or OR_4 , optionally in the presence of a catalyst, to obtain an activated OR_3 and/or OR_4 group;

(c) reacting said activated sphingoid compound with a polyalkylamine; and

(d) removing said protecting group, thereby obtaining said sphingoid-polyalkylamine conjugate of formula (I) as defined above.

42 (Previously Presented). The process of Claim 41, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

43 (Currently Amended). The process of Claim 41, wherein said protecting group is a primary amine protecting group selected from the group consisting of trifluoroacetamide, fmoc, carbobenzoxy (CBZ), and dialkyl ~~phosphoramidates~~ phosphoramidates.

44 (Currently Amended). The process of Claim 41, wherein said activating agent is ~~selected from~~ N,N'-

disuccinimidylcarbonate, di- or tri-phosgene or an imidazole derivative.

45 (Currently Amended). The process of Claim 41, wherein said activation is performed in the presence of a catalyst, the catalyst being ~~selected from~~ 4-dimethylamino pyridine (DMAP), tetrazole, dicyanoimidazole or diisopropylethylamine.

46 (Previously Presented). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

in step (a) both R_3 and R_4 are hydrogen atoms, and said process comprises reacting the compound of formula (I) with at least two equivalents of polyalkylamine to obtain a disubstituted sphingoid-polyalkylamine conjugate, with identical polyalkylamine substituents.

47 (Currently Amended). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

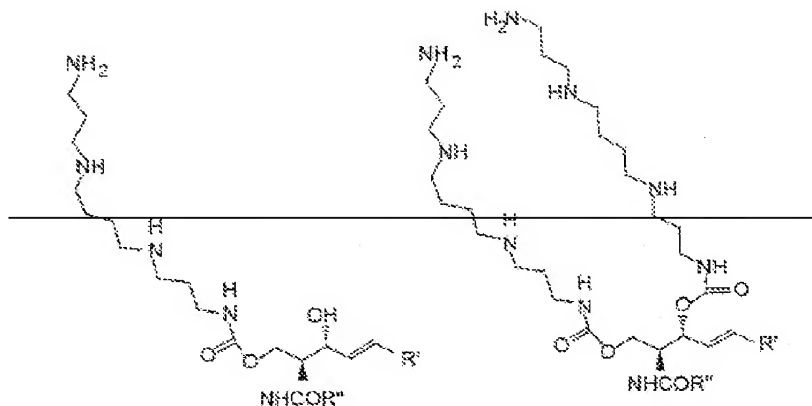
in step (a) at least one of R_3 or R_4 is protected with a protecting group, the process comprises reacting in step (c) the activated sphingoid compound with a first polyalkylamine; removing the protecting group of R_3 or R_4 to obtain an unprotected oxo group; reacting the unprotected compound with an activating agent to obtain an activated mono-substituted

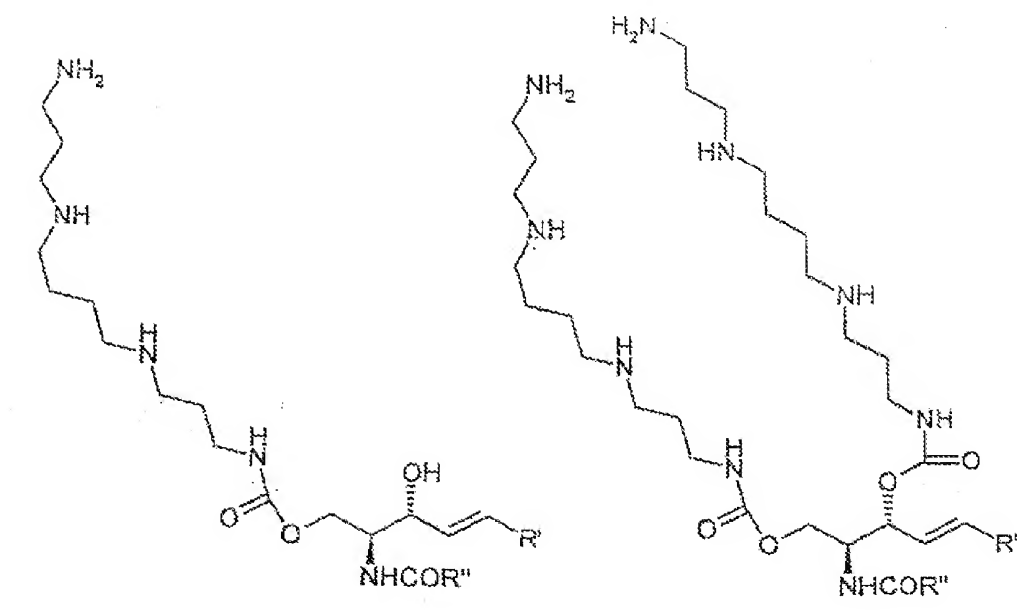
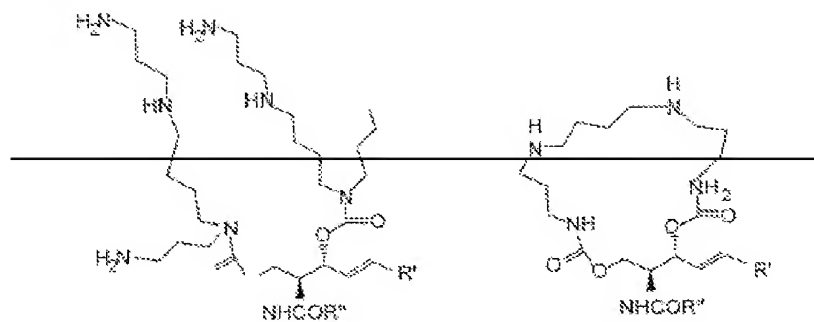
sphingoid-polyalkylamine conjugate; and reacting said activated mono-substituted sphingoid-polyalkylamine conjugate with a second polyalkylamine, thereby obtaining a di-substituted sphingoid-polyalkylamine conjugate, in which said first and second polyalkylamine may be the same or different.

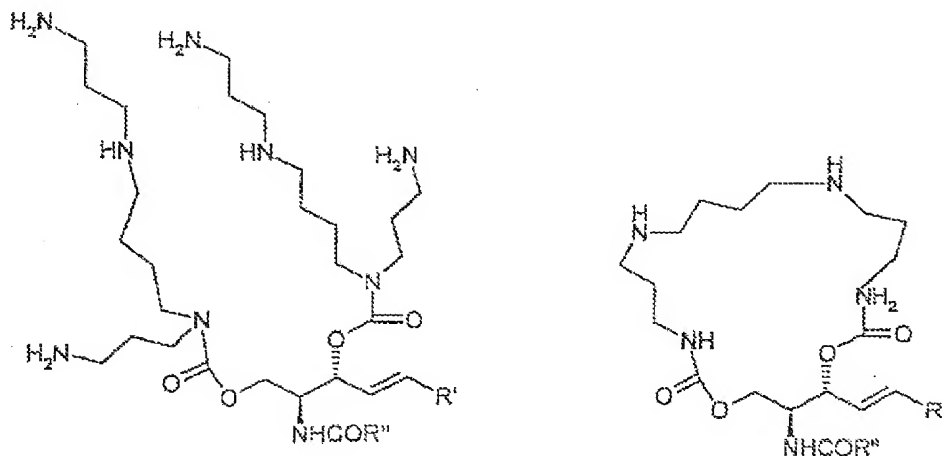
48 (Previously Presented). The process of Claim 41, for obtaining a heterocyclic sphingoid-polyalkylamine conjugate, wherein

in step (a) both R_3 and R_4 are hydrogen atoms, said sphingoid compound is reacted with at least two equivalents of an activating agent to obtain an activated sphingoid with both R_3 and R_4 activated and reacting said activated sphingoid compound with less than an equivalent of polyalkylamine, thereby obtaining a heterocyclic sphingoid-polyalkylamine conjugate.

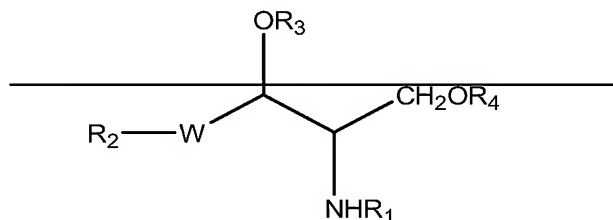
49 (Currently Amended). The process of Claim 41, for obtaining any one of the sphingoid-polyalkylamine conjugates as follows:







50 (Withdrawn-Currently Amended). A composition comprising a sphingoid-polyalkylamine conjugate in accordance with claim 20, and a pharmaceutically acceptable carrier of ~~the formula (I):~~



wherein

~~R₁ represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R₅;~~

~~R₂ and R₅ represent, independently, a branched or linear C₁₀-C₂₄ alkyl, alkenyl or polyenyl groups;~~

~~R₃ and R₄ are independently a group -C(O)-NR₆, R₇, R₆ and R₇ being the same or different for R₃ and R₄ and represent, independently, a hydrogen, or a saturated or unsaturated~~

~~branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~R_3 is a hydrogen; or~~

~~R_3 and R_4 form together with the oxygen atoms to which they are bound a heterocyclic ring comprising $C(O)-NR_9-[R_8-NR_9]_m-C(O)-$, R_8 represents a saturated or unsaturated C_1-C_4 alkyl and R_9 represents a hydrogen or a polyalkylamine of the formula $-[R_8-NR_9]_n-$, wherein said R_9 or each alkylamine unit R_8NR_9 may be the same or different in said polyalkylamine; an~~

~~n and m are independently an integer from 1 to 10;~~

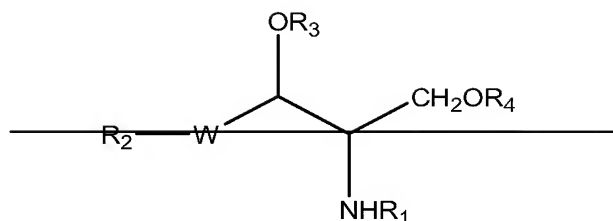
~~W represents a group selected from $-CH=CH-$, $-CH_2-$, $CH(OH)-$ or $-CH_2-CH_2-$.~~

51 (Cancelled).

52 (Withdrawn). The composition of Claim 50, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

53 (Withdrawn). The composition of Claim 50, further comprising a biologically active molecule.

54 (Withdrawn-Currently Amended). In the method of capturing a molecule having a negative charge, a negative dipole or a local negative dipole with a conjugate capable of capturing said molecule by electrostatic interaction, the improvement wherein said conjugate is a compound in accordance with claim 30 ~~of formula (I):~~



wherein

~~R_1 represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group $-C(O)R_5$;~~

~~R_2 and R_5 represent, independently, a branched or linear C_{10} - C_{24} alkyl, alkenyl or polyenyl groups;~~

~~R_3 and R_4 are independently a group $-C(O)-NR_6R_7$, R_6 and R_7 being the same or different for R_3 and R_4 and represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~R_3 is a hydrogen; or~~

~~R_3 and R_4 form together with the oxygen atoms to which they are bound a heterocyclic ring comprising $-C(O)-NR_9-[R_8-NR_9]_m-C(O)-$, R_8 represents a saturated or unsaturated C_1 - C_4 alkyl and R_9 represents a hydrogen or a polyalkylamine of the formula $-[R_8-NR_9]_n-$, wherein said R_9 or each alkylamine unit R_8NR_9 may be the same or different in said polyalkylamine; and n and m are independently an integer from 1 to 10;~~

~~W represents a group selected from $-CH=CH-$, $-CH_2-$, $-CH(OH)-$ or $-CH_2-CH_2-$.~~

55 (Withdrawn). The method of Claim 54, wherein said compound is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

56-58 (Cancelled)

59 (Previously Presented). The compound of Claim 34, wherein R_3 and R_4 represent the same or different polyalkylamine.